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ComputerWeekly

NEWS BRIEF

Robots to get DoI backing

ADVICE to firms on how to introduce robots should soon become more readily available. The Department of Industry hopes to extend its consultancy funding scheme, at present limited to the Production Engineering Research Association, to pay for 50% of the work done by independent consultants as well. At the same time, the British Robot Association is starting a campaign to convince industrialists of the benefits of automation. Thousands of brochures are being sent out, and an exhibition on robots has been set up at the House of Commons.

Shugart licence

SHUGART's UK distributor CPU Computers is to manufacture Shugart peripheral controllers under licence for the whole of the European market. The single board controllers can handle a mixture of floppy and fixed disc drives and streaming tape drives — up to four units in all. CPU expects to build 2,000 of them this year.

Pros' bureau

THE British Institute of Management and the P-E management consultancy have formed an accounting and registration bureau service for professional associations. They have chosen an ICL ME29 for the project.

Package holidays

A COMPUTER bureau travel agency package for ticketing, invoicing, credit control and accounts management is available from Gordon & Gotch of London. Cost of the system is based on the weekly volume of the agent's business.

Users welcome 'end telecoms monopoly' call

by Donald Kennett

DESPITE harsh criticism from British Telecom and the Post Office Engineering Union, last week's Beesley report, recommending complete liberalisation in the use of British Telecom's circuits, has received considerable support from groups representing telecommunications users and the industry.

The Telecommunications Users Association, Telecommunications Managers Association, Telecommunications Council and Business Equipment Trade Association have all responded that they are pleased with Professor Beesley's recommendations, that their own evidence to the Industry Secretary has been along similar lines, and they hope the recommendations will be ratified by the government.

In addition to value-added services not provided by British Telecom, which last July Sir Keith Joseph said private operators would be allowed to offer, Beesley recommended that privately run services should be permitted in competition with British Telecom's services.

He went further outside his remit to suggest that private companies should be able to provide switching and transmission facilities for publicly available alternative networks and that they should be able to re-sell capacity on international leased circuits.

Announcing publication of the report, Sir Keith said he was inviting comments over the next two months before coming to a final decision in July. Only "an effective demolition job by British Telecom" was likely to defeat Beesley's recommendations, he said, and he doubted there was a lot of change in the report.



POLLARD: "I'm no computer person in the programming sense but I can do what I need to very easily with Roscoe."

ADR redesigns Roscoe system

by Claire Gooding

DOYR of the software products industry ADR is poised to launch a "complete redesign" of its widely used online program development system Roscoe.

ADR claims the system has the biggest share of the market not by IBM's own TSO/SPF product, with sales to over 1,000 IBM mainframe sites worldwide.

Version 5, as the new development is called, has been designed to preserve the superficial part of the package already familiar to programmers, while rebuilding from the inside as such as the high-level interactive language RPP to general users, says ADR.

"What's happened is that a lot of changes are the direct result of

requests from users," explained UK managing director Nick Pollard. "Any product needs revitalising at some stage. Now we have a product that can go into the 80s without further fundamental changes." The updating has taken two years.

The latest version has a new high-level command language and 18 new terminal commands, a comprehensive online HELP facility and changes to the Active Work Space and Libraries.

Pollard, who describes himself as a novice user, says of RPP: "It does well for the guy who wants to change his programs on demand. By the end of the day he has something useable."

"The trust was trying to pull in money from private investors attracted by tax concessions in last year's Budget. These allow losses to be offset against income tax. Electra would

by Keith Jones

NIXDORF

has won the biggest order ever placed in the Republic of Ireland for computer equipment. The customer is the Bank of Ireland, an ICL 2900 user, which has chosen Nixdorf 8864 terminal systems to equip its 356 branches in Ireland and the UK. The order is worth about £5 million to Nixdorf.

A Bank of Ireland spokesman said that ICL was among the last eight bidders for the contract, but that Nixdorf's competitors in the last four were IBM, Olivetti and Philips.

He stressed that no political pressure was applied on the bank to choose the Nixdorf kit, etc.

The collapse of Electra Investors Trust throws doubt on the prospects for six computer companies which are expected to try to raise money for themselves through the Stock Exchange later this year.

Electra last week tried to raise £20 million for investment in small but promising computer and other high-technology companies, but managed to attract only £3.5 million. This is less than half the maximum £7.5 million set by the directors to be sufficient to make it a going concern.

The trust was trying to pull in money from private investors attracted by tax concessions in last year's Budget. These allow losses to be offset against income tax. Electra would

have transferred shares in companies it backed with investors' funds to the individual investor allowing him to obtain the tax advantages.

The news of the failure will hit

the prospects for LSI, Norsk Data and Star Computing which are three of the six computer companies known to be planning an offering of their shares to investors.

LSI joint managing directors Tom Fitzpatrick and David Johns

have plans well advanced for a major fund-raising operation, first to place some of their shares with private backers, and later to go for a full launch to the public. Details of the offer are expected by the end of May.

Norsk Data is understood to have appointed already County Bank as its adviser in preparation for a launch of the shares on the Stock Market in June.

Turnkey systems house Star Computing is another candidate for a placing, and is already well known in the financial community through its Star Auditor package aimed at accountants.

Three other companies are expected to try to raise almost £2 million for their own expansion.

Despite the recent Stock Market boom which has seen the share index climb to an all-time high, all these placings — and the funds they are trying to attract to fuel the growth of the companies — are now in danger.

by Eileen Stainer

FRESH hope for Nascom users has emerged with the announcement that Lucas Industries, the transport engineering company, has bought the business from receivers W. H. Cork Gulf.

Lucas Logic, part of the Lucas group, is to incorporate the Nascom microcomputer and its associated products into its computer applications arm.

The existing price policy will be adopted initially.

Our first priority is to satisfy the requirement for Nascom II and complete the shortfall," said Deane. Demand for Nascom II has been increasing since the company went into receivership almost a year ago. Since then an attempt at reviving the company by Peter Matthews of Allect Technology Initiatives failed when payment for the assets became overdue.

Second phase in the plan is to study the product in the long term and decide upon improvements, additions and future developments.

by Keith Jones

AFTER a long wait, the University of London Computer Centre has got to get the supercomputer it wants to add to its nationwide network facilities.

ULCC has just placed an order for an IBM compatible V8/8 mainframe and says it will act as a "support system" for a much more powerful machine.

Cray says that its machines are already front ended by Amdahl computers at several sites including its own installation in Minnesota and at the Max Planck Institute in West Germany.

Dr Henry Norton, secretary of the universities computer board, pointed out that both London and Manchester Regional Computer Centres are planning a parallel

link its mainframe computers.

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Unions give no-confidence vote in ICL

THE management of ICL has agreed to meet union representatives soon, following a no-confidence vote in the company's management by the unions.

A joint union conference in London last week unanimously passed a motion declaring "a lack of confidence" in ICL's senior management". The meeting included ICL staff as well as union representatives and a report issued by ASTMS, the biggest union involved, said the government's £200 million loan guarantee "was the wrong type of support for the company".

Prestel fees up

SOME Prestel charges are to go up from July 1, the first increase since the service started in September 1979 and the minimum necessary to keep it on its financial targets, according to UK marketing chief Frank Burgess. The standard rate of charge (from 5pm to 6pm) is to go up from 3p to 4p a minute. Other charges and rentals stay the same.

BT denial

REPORTS that British Telecom is to close down its regional mainframe computer centres and install 600 ICL ME29s at more than 60 telephone area sites have been denied by the organisation. A BT spokesman said that such a move had

Borland to set up Welsh micro factory

by Eileen Stainer
KERR BORLAND, ex-marketing director of Nascom Microcomputers, is about to open a microelectronics factory in Arfon, North Wales.

Initially the factory will concentrate on microcomputer peripherals including some for the Nascom model, then it will move on to more advanced projects including dedicated micro-based systems.

Operating under the name of Arfon Microelectronics, the company will be run by two directors, Kerr Borland as managing director and Mike Lambert, who was also with Nascom, as financial director. Borland is still looking for a quality manager and a purchasing manager.

Since his departure from Nascom Borland has set up a company of his own, Product Launch, based in Potters Bar, which has taken on

NEWS BRIEF

Job for the liquidator

THE man who negotiated the sale of the failed conference and training company Infotech to Pergamon Press has joined the Robert Maxwell company. Peter Mason was appointed liquidator, and prepared a report on Infotech for its creditors which so impressed his new employer that he was offered a job.

After the sale, Mason came under criticism from rival bidders for accepting Pergamon's offer of £135,000, twice Infotech's tangible assets. He rebuffed criticism by saying that only Maxwell had put his money on the table.

Digital switching

A DIGITAL voice and data switching system capable of handling up to 20,000 telephones and terminals including text, graphics and facsimile has been announced in the US by Datapoint. The system, called the ISX information switching exchange, will interface to Datapoint's ARC coaxial cable based local network. It has already won 12 orders and letters of intent worth \$1 million.

Atomic power link

EMULATION of ICL 7502 and IBM 3270 interactive terminals is to be handled by dual MDS Series 21/20 distributed processing systems ordered by the UK Atomic Energy Authority. The 21/20 will communicate with an ICL 3900 mainframe system at the UKAEA's establishment at Windscale, Cumbria, and with an IBM 3033 at Harwell.

Second source

MOTOROLA is to second source National Semiconductor's magnetic bubble memory devices in an agreement which involves a full design database including basic device architecture and test procedures. Initial devices include a 256-bit and a megabit bubble memory, and their controllers. Motorola's previously second sourced Rockwell's bubble memory devices, until the latter opted out of further investment in the area.

Stake in Diktat

THE size of Pilkington's investment in Manchester-based Diktat, the word processing distributor and bureau, has now been agreed at £20,000 for a 19% stake in the company. John Pollard and his partners started the firm in 1978 with only £3,500. As part of the Pilkington deal Diktat is moving to St Helens and expects to create 60 jobs in that area.

RIPPINER with Tektronix new graphics display direct-view storage tube.

'Dying breed' gets new life

by David Craver
THE pioneers of the direct-view storage tube for graphic display terminals have introduced a new series which will give 'lots of life to what some said was a dying breed,' according to Jon Reed, vice-president of Tektronix's Information Display Division.

Tektronix is the leading manufacturer of computer graphics displays, with an estimated 40% of the European market, Reed said. While business graphics is probably the fastest growing segment, he went on, Tektronix will continue to concentrate on scientific and engineering applications.

Highlights of the two new

models in the 4110 series are the addition of local intelligence on the terminals to reduce dependence on the host computer, enhanced communications speed with the host, and increased local storage capability, with RAM memory expandable to 600K or 800K bytes, and a single or dual 512K-byte floppy disk unit.

Both the new products, the 4112 raster display terminal and the 4114 direct-view storage tube with refresh capabilities, will be comparable with the original 4010 series, he went on. Tektronix will continue to concentrate on scientific and engineering applications.

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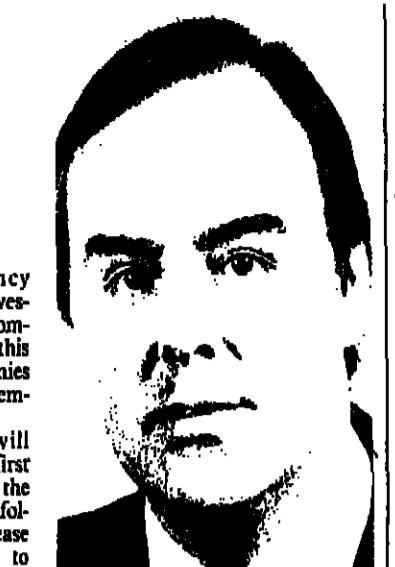
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BORLAND . . . His existing company, Product Launch, will market the new factory's products.

consultancy marketing work for micro-based products. He has also managed Specialist Micro Design, a consultancy design operation, formed by the ex-Nascom design team.

In the new venture Product Launch will become a wholly-owned subsidiary of Arfon Microelectronics, and SMD a shareholder, although it will act as the entire design division of AM. At the moment the design team is working on products for 1982, having completed six designs for this year.

Borland sees the three concepts interrelating to become one complete task. SMD's clients will have the use of AM's factory for the manufacture of their recently designed products, and Product Launch will be able to market them.

The factory, on 20,000 square feet, is being leased from the

new company, Product Launch, based in Potters Bar, which has taken on

the first peripheral products, including a light pen, a sound synthesiser (using National

semiconductor's speech synthesis chip), and an infra-red operating keyboard, should be available by the middle of next month.

Borland, who will be based in London, intends to set up a dealer network in the UK and eventually in Europe.

The new system works by presenting a series of tables on the

display screen which are filled in according to what subjects the user wishes to access. The user has to know neither where the data is located nor how it is formed, and data can be retrieved, updated, manipulated and used for calculations.

Designed for non-data processing staff who have access to computer terminals, the system provides users with the ability to make ad hoc demands on the database without requiring the DP department to write a special routine.

TPS-access can be installed as a freestanding package or as an option to Telecomputing's TPS transaction processing monitor. Both are compatible only with ICL hardware, although a spokesman pointed out that the programming language is not manufacturer oriented, and 'one day' will be adapted for other equipment.

Telecomputing says it has over 400 TPS users worldwide with about half of them in the UK, and that UK orders for the system are 'rolling in' at about three or four a month.

Raytheon moved up from 90th position to No. 69 with sales of just over \$5 billion.

Honeywell moved eight places up the table from 79 to 71, and Sperry made a 12-slot jump from the 104th position to 92.

Burroughs, almost alone among the computer companies on the list, fell from 18th position to 137, despite the fact that the corporation over ten years has the best

record in the US in terms of cash dividend growth. Burroughs has shown compound annual growth in terms of cash paid on its shares of 26.6% between 1971 and 1980.

Control Data made a hefty 18-position jump to take up position 141, and Digital Equipment did slightly better, making the No. 162 slot from 187 position.

In the sub-billion dollar list which begins at No. 302, Intel jumped 32 places to make the 336th position, while Memorex, which posted a loss of \$28 million in 1980 and made the Fortune list of the biggest money losers in America, showed a drop from last year's 346 slot to this year's 358.

Competition in the last 100 positions was much tougher, but Data General jumped from 1979's 441 to 1980's 409, which makes it one of the faster climbers in the league.

Storage Technology showed a 23-place move to make it No. 433.

Wang Laboratories showed the most spectacular growth, coming from outside the list to make the No. 457 position. From a 1979 non-list calculation of a 576 ranking, this shows Wang growing faster than over 100 companies, and Fortune also shows Wang as the third best performer in the whole of the US in terms of total returns to investors.

Wang was the only computer company to make a position in the ten best returns to investors in 1980, and the company showed a total return to investors of 156.8%, more than 100% better than the computer and electronic industry median return of 36.07%.

Wang also made the top ten companies in terms of changes in sale, with a 68.9% increase between 1979 and 1980.

*The Fortune 500 list appears in Fortune magazine, which is published fortnightly by Time-Life Inc.

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THE robotics market in Scandinavia will shortly receive a shot in the arm with the merger of the Electrolux and ASEA groups' interest.

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Commodore UK prepares for expanding product line

UNDER its new general manager Bob Gleadow, Commodore UK is undergoing an internal restructure and expansion to cope with the fast growing product line emerging from Commodore International.

Three major products have been introduced within a year: the SuperPET, the Vic and the micromainframe, and Gleadow comments: "We want to see the market expanded; we believe it has to expand."

The internal restructure involves the formation of four divisions, one of which will represent the company's move into the cash register market, as announced last November. Another will be set up in September for communications.

The other divisions will concentrate on the PET, the Vic and associated products, the new micromainframe system announced at Hanover last month, plus a future product which will probably be a 16-bit system.

Gleadow sees Commodore UK taking more of the important decisions from the international company and getting more involved in development work on new products. This will apply especially from June onwards when 80% of the products for Europe will be manufactured in Germany rather than in the US.

On the software side, Gleadow hopes that Commodore UK will be taking more of its products to the worldwide marketplace. "We are starting to market our products aggressively now, instead of just selling them as we used to," he told Computer Weekly.

The expansion involves the hiring of more staff — for example, John Baxter has just taken up the post of marketing manager — as well as the physical occupation of more office space. The company has just bought an extra 8,000 square feet next to its existing premises in Slough.

The launch of the dual 8-bit processor system called the micromainframe at Hanover this year was described by ex-general

manager Kit Spencer as a "quantum leap". Now, says Gleadow, the next quantum leap is under development and could be launched at the PET Show in June, but he refuses to elaborate.

One can safely assume this to be a 16-bit microprocessor based system, especially as Commodore's closest competitor in the UK, Apple, is expected to release such a system by the end of the year. It will be interesting to see which particular 16-bit device Commodore chooses. Apple is believed to have picked Motorola's 68000, which at the end of last year was said to have captured 44% of the market, 4% more than Intel's 8086.

Apple is also said to be developing a competitor for the Vic 20 colour computer which should be available in the UK next month. Like the Vic, it will be priced under £200, but is not expected to be released until the end of the year.

Commodore is aiming the Vic at

the home and education market,

where the company admits it will overlap with the PET. However, the Vic is cheaper than the PET, has better colour graphics, and a higher resolution capability.

The Vic was launched last November in Japan where Commodore claims to be top in the personal computer market and sales of the Vic are expected to reach 100,000 in the first year. In the UK, the company claims to have 60%-70% of the market, selling about 2,000 PETs a month.

Commodore's closest competitor in the UK, Apple Computers, claims to be selling about 1,500 PETs a month.

Sales of the Vic are expected to be high. "We hope to sell more Vics by Christmas than we have sold PETs in the last three years," said John Baxter. In August the system is going out to the high street stores ready for the Christmas rush, but it will be available from all PET dealers from next month.

Prestel and Oracle can be used with the Vic. Printer and floppy disc drive will also be available if needed.

Next on the schedule for the Vic is a plan for networking using several Vics with one central Vic or PET. Commodore should be releasing something along these lines by the end of the year, just before the launch of the upgraded Vic 20, the Vic 40, which as its name suggests uses a 40-column screen.

Commodore is also working on a portable version of the Vic using CMOS devices and LCD display.

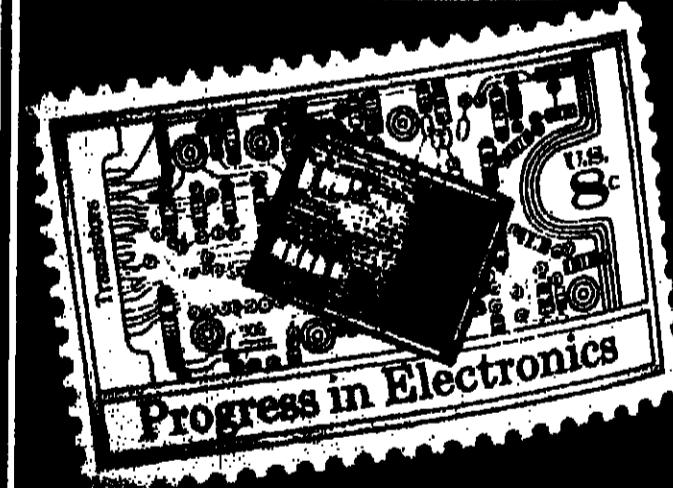
New version of AIM 65

AN enhanced version of Rockwell's AIM 65 single board microcomputer, the AIM 65/40, was launched at the All Electronics Show in London last week. The new system still uses the 6502 eight-bit microprocessor from MOS Technology, making the two systems fully compatible.

The 65/40 has 65K of on-board memory and selectable PROM, ROM and RAM configurations. Dynamic RAM is expandable on the main module, from 16 to 48Kbytes and 32Kbytes of ROM/PROM are supplied: 12K for the monitor and text editor firmware, and up to 20Kbytes for applications software.

The system comes with an on-board thermal printer, a full size 65-character keyboard, and a 40-character display. Up to two cassette recorders can be used for storage of user generated programs. There is also the facility for a teleprinter and a modem via an RS232C interface.

Software languages available to run on the 65/40 include Basic, and AIM 65 Fortran, which features reverse Polish notation. PL65 and a form of Pascal called Instant Pascal will be available later this year.



32-bit chip from Bell

DEVELOPMENT of a 32-bit microprocessor for use in commercial products and services is due to be completed by Bell Laboratories later this year. A version which has already been completed uses 100,000 transistors and has been fabricated using CMOS technology.

This makes Bell the third company to have announced development of a 32-bit processor, but like Hewlett-Packard's device it will not be commercially available. Intel is still the only company to have announced such a device, the iAPX432, for the commercial market.

The Bell MAC-32, as the device is called, was designed and built by a team of engineers at Bell's microsystem design, CMOS integrated circuit design, and IC

process development and testing departments. Computer aided design techniques were used to create prototypes.

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The battle for jobs as new technology changes our lives

NEW technology is changing the lives of systems analysts, programmers, operators and other DP-related staff in many ways other than those which are immediately apparent.

It is not only a question of learning the willing suspension of disbelief when faced with micro-technology, which claims to be able to perform an enormous variety of computing tasks at a ridiculously low cost. It is the realisation that computing capacity is moving out of the exclusive control of the DP department and into the general office at both managerial and secretarial level.

It is also the impact, which is bound to be an increasing one, of new technology agreements.

No longer is it merely a case of involving trade union representatives as early as the feasibility stage — although even that, for many companies, is a step into the unknown. Unions are now requiring to be consulted fully not only in the actual implementation of new application, but also in the initial conceptual stage.

New technology is no longer the preserve of R&D; it is in the arena of industrial relations, and systems analysts and designers who have never needed to concern themselves with such matters now find that they have no choice.

Those of us who entered the computing world in the late Sixties will remember that one of the great selling points of computers was the staff savings that could be achieved in certain applications: no longer. Draft technology agreements everywhere — in Ford, the Open University, Plessey, and the Civil Service — have as one of their main articles that "there shall be no redundancy (ie dismissals) as a result of introducing computers." (Ford).

The Civil Service National Whitley Council draft agreement goes even further: "As a pre-condition for the introduction of new

DOWNTIME

Youth has its fling

"WE ought to have had a special category for the old timers," commented the exhausted organiser of the Space Invaders competition held by Intertron Electronics at the Piccadilly Hotel, London. "I mean for those over 21."

Youth definitely had its fling: it had been decided to have a junior group for those 13 and under, and then an 11-year-old showed everybody up by winning the whole contest. This intrapreneur, Stephen Bradley, will go on to the States to visit Disneyland and play more Space Invaders.

The other intrapreneur, Inforsol's Pip Burlington was "that the contestants were too good, and kept getting maximum scores. She frantically upgraded the level of the games on the Atari TV adapters, leading to versions with invisible and zigzagging borders, and no shields. Finally she produced a not new cartridge from America, but they were terribly good at that, so the market."



Marilyn Kennedy-McGregor is the second contributor to *Systems Thoughts*, a fortnightly column aimed primarily at systems analysts. She lectures in systems analysis as part of the City University business systems analysis team. Prior to that she worked for IBM and became involved in the role of data processing in business. Her particular interest is in the problems of information handling and the efforts of technology on organisations, and she has presented papers in the UK and Europe.

Like her fellow contributors, she welcomes reader reaction — for publication or not. Letters should be addressed via the Editor:

Technology in the Civil Service, it is agreed that existing job levels and working conditions shall be fully protected and that all staff in the Civil Service shall share equally in the benefits accruing from the new technology by way of the pressure of competition.

Typists using word processors are unlikely to have come before contact with computers before; they think of the machine not as a computer but simply as a means of doing their job better and more easily. A Civil Service report on a word processing project notes:

"The traditional assumption that typing duties are more appropriate to women is quite likely to be untrue. All that is clear is that they will play an increasingly large part in the constraints imposed on systems analysts.

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The users involved would probably appreciate a partial stemming of the flow of paper.

No greater service can be promoted by DP management than that of encouraging better use of the computer system. If necessary, greater flexibility and responsibility should be given to the operating team. Following the firm lines of the installation rule book, for example, and aborting job runs automatically after three attempts should be more a matter of judgment and experience.

Productivity, and the need to maintain it, is probably a major reason for the general lack of response to recent courses and seminars, the State of the Installation having precedence over the State of the Industry.

To achieve these desirable aims, more installation emphasis must be put on operator training. Funds should be found to allow the ops team to become more efficient in terms both of machine and system understanding. One operator in the team with a basic understanding of programming could be more productive than a faster line printer, larger capacity disc drive or even additional memory.

Even the banks, seldom noted in the past for containing costs, are getting the productivity message.

They are now turning their customers into computer keyboard operators. The latest banking terminals revealed by Philips give the user a whole series of options including that of a PIN number. In this case however, the PIN in question does not refer to additional housekeeping money but a more basic Personal Identification Number.

Without this number, apparently, user friendly systems are not that friendly — or productive.

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FOCUS

Belt tightening for the year of DP productivity

THIS year has already been designated the year of productivity. Achieving more workflow for less cashflow seems to be the general aim of the exercise for both supplier and user.

Unfortunately the message does not seem to have reached all areas of the industry. Just try getting your hands on the new IBM 3080 series before 1983; your new installation telephone or telecom kit this year, or an urgently required software specialist ever.

No less a figure than the new Minister for Information, Kenneth Baker, is rallying to the productivity cause — even if his major contribution appears to be shovelling out vast quantities of public money in a glorious attempt to turn the UK into a wide-area Silicon Valley.

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What happens to a redundant programming department?

At the end of last summer a whole programming department was lost when McCordale Books closed down its computer centre in Colchester. The team was broken up and its various skills dispersed around the country.

When the time came, all left with firm offers of jobs, most richer from the quite generous redundancy settlements, but some less than satisfied by arbitrary rulings.

Now, eight months later, there is enough perspective to see how they fared: Ken the senior programmer, who doled out the specs, Terry and Bill who both joined as trainees on the same day and who were promoted together through assistant and programmer, and Ian the latest recruit, who had already been redundant once.

To see how it had all turned out, I organised a marathon phone-in. Terry Croker faces possibly the greatest upheaval. He is in his early twenties, plays sport, and has two major hobbies, squash and space invaders, and other video

games in general. On September, 1980 he joined SenoSystems of Sudbury and has already reported in Computer Weekly on his early experiences of micros and converting from Cobol to Basic.

At that time, things looked pretty rosy, but now SenoSystems is in trouble. His only choice is to become one of the daily committers over the 60 miles to London.

"And I'm one of the lucky ones," said Terry. "I've been offered a good job in London by Systime, who are trying to absorb the staff, which pays enough extra to cover the fare. But," he was regretful, "I shall lose my company car."

When matters came to a head at Seno, Systime stepped in with admirable speed and in a matter of days arranged interviews in Northampton for the 23 computer and sales staff. Though not interested in supporting the whole weight of the company, it has offered jobs to all but two of the 17 analysts and programmers — primarily in Northampton. For most:

Technically he is a senior programmer with Eastern Data Processing of Witham, though he says the title carries no supervisory responsibility. He is one of a team of four programmers with four DDE punch girls and an operator, answerable to the managing director.

Hurst is in the garden and agricultural seed, trade and in recent months the main computer effort

and for the medium to large companies — one is Lord Rayleigh's Dairy — with an ICL 2903. "The same machine as at McCordale's," said Bill. "But we don't have to deal with cards here, all the punching is direct to disc."

Quite a large proportion of the work is amendment, which can be difficult on another's programs, particularly on older versions.

"But the new work we can write to standards," Bill said, "and we have to write our own specs, which is good practice."

Ken Taylor has not found much difference in the work except that he went from a senior's job with responsibility for training and supervision, to the more independent programmer concerned with his own projects and time-tables. He joined Hurst, Gunson, Cooper & Taber of Witham, last September and is one of four programmers under the DP manager.

Terry is in the garden and agricultural seed, trade and in recent months the main computer effort



With his redundancy settlement, Ken Taylor bought a Yamaha XS1000 motorcycle to join his 1957 BSA Gold Flash and 1953 BSA Bantam. It took him to and from his present job in the programming department of Hurst, Gunson, Cooper and Taber, seed merchants of Witham.

has been towards a big online system to cover the whole trading operation, from ordering and receipt of seeds through grading, packing and eventual supply.

Ken commented on the hardware. "I've stayed with ICL, from a 2903 at McCordale's to a 2904 here, so the coding is much the same. I still prefer Cobol, though I went on an RPG course in February."

All the programmers are analysts as well, and Ken either writes his own specs or receives them from his DP manager. It is a possible future move for him. "I wouldn't mind taking a formal training in analysis, now that I've encountered and enjoyed it."

Ian Davis performed only a short time at McCordale's, since the axe fell four months after he had joined. He left a little earlier than most, in July 1980, to work in the programming department of Ransomes Sims & Jefferies, the agricultural machinery specialists. The move made him financially better off, enough at least to pay the increased travelling costs to Ipswich.

"Ransomes is a large factory on the edge of Ipswich employing about 2,000 people," Ian told me, "so the environment is very different, but the work on financial applications is similar."

Unusually, there has been plenty of development work, mostly on purchase ledger and ex-

OP SPOT

This week, Mike Ellis explains the possible role of operations in systems development, design and testing

Operations analyst must influence design of system by getting involved early

THE primary objective of the operations analyst is to ensure that a new system fulfils the design requirements of the operations department. To do this the analyst must influence the design of the system by early involvement in the whole process.

The operations analyst should have no day-to-day responsibilities, and be able to devote time to a project from the day that terms of reference are drawn up.

It is not difficult for a systems analyst to include the requirements of operations into a system design, providing that the operations analyst knows what the requirements of operations are and that they are specified before the design becomes enshrined in a program specification.

The operations analyst's first involvement usually occurs when the systems analyst commits some design ideas to paper. Before then it is difficult to assess the operational effects of a new system.

Documentation standards for systems design vary widely, but usually a feasibility study is followed by a design specification.

At the feasibility stage, the operations analyst needs to know the effects of the new system in terms of the likely resource requirements, additional equipment required, impact on operations staffing and significant changes to existing production schedules.

The following design requirements are examples of the type of standards which operations may

require systems designers to follow.

● Programs should tie up resources only for as long as they are required.

● An online system must inform the operator clearly when it may be closed down.

● Systems should be capable of running with no data when the occasion demands.

and standard trailer records with item counts and hash totals.

● Applications must carry out automatic rather than manual reconciliations whenever possible.

● The number of parameters to be input must be kept to a minimum. Ideally parameters should be held on disc.

● All output reports should have standard headings showing report name, date, week and day number, page number and program producing the report.

● All output reports must be terminated by an end of report message.

● Reports produced at a central site for transmission to a remote site must be buffered remotely rather than centrally to allow for local reprinting.

● Mainframe programs must handle invalid input data without aborting. The invalid data should be rejected and reported upon, thus allowing processing to continue.

● There should be a standard input system for all applications. For daytime online systems with overnight batch processing, the availability of the online system must not be jeopardised by the non-completion of the batch processing. Operations must have the facility to abandon overnight processing, bring up the online system and do a double run the following night.

Many of these requirements are self-evident and should be part of good program design. However, since there is no guarantee that this will happen, the operations department must protect its own interests and place these requirements on the designers. The design requirements will be compiled by the operations analyst. At all times the operations analyst must represent the concerted views of the whole operations department.

Systems testing, where the analyst proves that the design and program actually meets the business requirements, is probably the most critical phase of project development. To ensure that the operations department is given a system which really works operationally, the operations analyst must take an active role in the testing of the new system. The design requirements will be compiled by the operations analyst. At all times the operations analyst must represent the concerted views of the whole operations department.

There should be three levels of testing a new system: at program level, subsystem/link testing level and the total system test.

The operations analyst is involved in the latter where the system is run in an environment as close to normal production running as possible using production input files, production files placement, production job control language, production documentation and production people.

It is important to recognise that total system testing usually requires significant amounts of human and machine resources and can add several weeks or months to the duration of a project. This should therefore be part of the overall project development plan and its importance should be stressed to the project team.

The operations analyst should produce a series of tests covering reliability, restart and recovery, interfacing and destructivity. Because a total system test is an attempt to mirror a production environment, it should be run and monitored by operations staff.

After all tests have been successfully completed, the operations analyst should produce a statement of the resources to run the new production system. This should cover elapsed time, disc drives/disk packs, tape drives/tape reels, core required and file space.

This requirement should be compared against the previously reported resource requirements at the earlier design stage and should be formally accepted by the production staff.

The responsibility for the total system testing phase belongs to the development project leader — as does every other development phase. However, it should be a joint exercise between systems and



Mike Ellis is operations development manager with the Littlewoods Organisation in Liverpool.

operations staff. If the test is to take the form of a parallel run, then users may also be involved.

Before the actual testing can begin, there is a lot of preparatory work which must be done by the operations analyst.

JCL for each new system should always be written by the operations analyst to ensure that operations standards can be maintained across all applications. JCL must be designed for normal runs of the system, plus any extra runs concerned with security copying of files, transfer or conversion of files from other systems, initial master file creation and any other special jobs to aid in error recovery.

Restart JCL must be designed either as separate job or as facilities within the JCL for the job.

The ops analyst must also determine the file placement of the new

operations analyst's primary responsibility in implementation is to ensure that the new system is introduced in a controlled manner, with minimal disruption to existing applications.

Yet again, early planning is vital and should begin at the detailed design stage when an overall strategy is established. The plan should describe how the implementation is to be phased, over what period of time, what each phase will consist of and whether there is to be a pilot run. The preparation of the plan should be the joint responsibility of the operations and systems analysts.

Members of the implementation team should be on-site to manage the actual implementation, with on-call support available if necessary.

As a member of this team, the

operations analyst must take an active role in the testing of the new system.

To ensure that the operations department is given a system which really works operationally, the operations analyst must take an active role in the testing of the new system.

system in conjunction with the relevant production staff. Will the file be on tape, or on fixed or removable discs?

Finally, the production manual for the new system should be available during the total systems testing phase to enable production staff to resolve minor problems in running the tests. The ops analyst must be responsible for writing those parts of the manual relating to file placement, JCL and recovery.

The operations analyst should really be affected by the new system, as those users who requested it. It should be transparent to all other users that the change has taken place.

A final tip: Do not arrange the post-implementation celebration too soon after the system has gone live. I have known more than one occasion where a new system has failed within the first week and operations have not been able to locate anyone to provide support, because the whole team has been out celebrating a successful implementation.

The only people who should really be affected by the new system are those users who requested it. It should be transparent to all other users that the change has taken place.

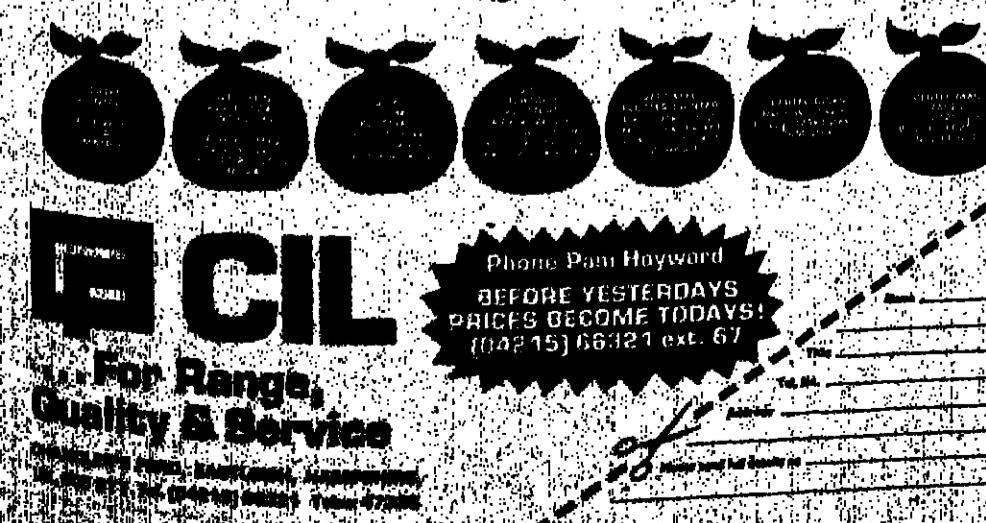
A final tip: Do not arrange the post-implementation celebration too soon after the system has gone live. I have known more than one occasion where a new system has failed within the first week and operations have not been able to locate anyone to provide support, because the whole team has been out celebrating a successful implementation.

The responsibility for the total system testing phase belongs to the development project leader — as does every other development phase. However, it should be a joint exercise between systems and

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Correction

IN the April 9 Op Spot we reported incorrectly that Mr Ian Checkeman was ops manager for Maldstone. Mr Checkeman left the company's employ in February.

Director of special systems for Digitus

CO-FOUNDER of Logic, Steve Feldman, has joined Digitus as director of special systems. Feldman is also former manager of the computer sciences and micro logic divisions of Data Logic.

He has over 20 years' experience as a computer user, consultant and manager in the UK and Europe. He started his business career as a statistician. In 1964, he joined Scicon as consultant and worked on the design of real time systems for air defence and air traffic control.

He co-founded Logic in 1968, taking responsibility for a variety of projects, including the UK natural gas telemetry and control, graphics studies, product surveys and hotel reservations.

He joined Data Logic in 1974, establishing the company in minicomputer systems and subsequently becoming responsible for

microprocessor projects.

He will direct Digitus' development in distributed systems and local networks.

■ Clare Rice has been appointed vice-president of marketing and assistant to the president at Rockwell International's Commercial Electronics Operations (CEO), in Dallas, Texas. She spent the last six years as Avionics Group president.

■ Philippe Courtois has been promoted from international sales manager to general manager of Latin American and Canadian operations at Modcomp. He has been with the company for five years.

■ Jack Walker has been appointed regional manager, engineering services, for Control Data. He joined the company in 1968 and served most recently as manufacturing and distribution manager for Control Data in Stevenage.

■ Ray Edmonds has joined Harris Information Systems as London West End district sales executive. He previously held a sales management position with Data 100.



Steve Feldman

Chairman for Aregon

A CHAIRMAN has been appointed at Aregon. He is Alfred Singer, currently chairman of Cannon Assurance and of Wholesale Vehicle Finance. He is also on the boards of Guinness Mahon, Equity Capital for Industry and Geertner Holdings.

Singer is a Fellow of the British Computer Society and former chairman of NEDO's Computer Sector Working Party. Before spending five years in the public sector as managing director of the National Giro Bank and as chairman of the Post Office Pension Fund, he was deputy managing director of Tesco.

Aregon obtained its initial funding from the NEB, and expects to get further finance from private institutions.

■ Seymour Hoskin has been appointed senior consultant with CMG Computer Management Group. He was formerly with Arthur Young Management Services.

■ Pat O'Brien, formerly a senior sales executive with UCC, has joined Small Information Systems Company Sisco, as sales director, heading the company's word processing division.

■ Richard Leeson is to head the new London-based subsidiary of Compact Accounting Services CAS, Compact Accounting (London) CAL, as managing director with a majority shareholding. He joined CAL from the Enterprise Systems Group where he was systems planning manager.

■ James Colbert has joined MSA as systems consultant specialising in payroll. He was previously support manager for Peterborough Data Processing.

■ Fred Mobbs has been appointed managing director of Control Data. He has been with the company since 1965. During his time with the company, Mobbs has held several international sales and general management positions, including regional sales manager for East Europe, based in Vienna, country manager for Switzerland and regional manager for a group of countries in Western Europe.

■ Harry Binney has been appointed Northern Area sales manager at Digico. He was previously with Data General. Avis Kyle, formerly a sales executive at Control Data, joins the company as sales executive for London and the South Eastern territory.

■ Richard Leeson is to head the new London-based subsidiary of Compact Accounting Services CAS, Compact Accounting (London) CAL, as managing director with a majority shareholding. He joined CAL from the Enterprise Systems Group where he was systems planning manager.

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Ford Sinclair O'Brien Edmonds Thomas Denyer

Ford

Sinclair

O'Brien

Edmonds

Thomas

Denyer

■ Janet Ford has joined MSA as systems consultant, specialising in the Q-Pac Payroll and Personnel system. She joins the company from Marconi Avionics, where she was a systems analyst.

■ James Sinclair has been appointed manager of I. P. Sharp's new office in Hong Kong. Since 1979, he has been a senior consultant with Sharp in Europe, specialising in planning, operations research and database management.

■ Tim Denyer has been appointed regional sales manager for London and the Home Counties at Cifer Systems. He has been with the company for five years, working as sales executive for this area.

■ Richard Leeson is to head the new London-based subsidiary of Compact Accounting Services CAS, Compact Accounting (London) CAL, as managing director with a majority shareholding. He joined CAL from the Enterprise Systems Group where he was systems planning manager.

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DIARY

MAY 5

Branch AGM/social evening. IDPM Scottish branch. Station Hotel, Stirling.

Personal Computing and its Impact on Data Processing. IDPM Birmingham branch. Dudley College of Technology, The Broadway, Dudley, 7.30.

AGM followed by film show. BCS Kent branch. Kings Head Hotel, High Street, Rochester. 7.30.

AGM followed by Prospecting Pits and Programs. BCS Bristol branch. St Vincent Rocks Hotel, Clifton. 7.15.

AGM. BCS Edinburgh branch. Mountbatten Building, Heriot-Watt University. 5.30.

AGM with demonstration of small computer systems. BCS Kingston branch. The Polytechnic, Peckham Road, Kingston-upon-Thames. 7.30.

AGM followed by wine and cheese. BCS Newcastle branch. Ellison Building, Newcastle Polytechnic. 6.00.

AGM and presidential visit, followed by wine and cheese. BCS Sussex branch. Brighton Polytechnic, Lewes Road, Brighton. 7.30.

AGM followed by The Society and its Membership. BCS East Anglian branch. Norwich Union Social Club, Pinebanks, Norwich. 7.00.

MAY 6

Don't Shoot The Auditor — He's Doing His Best. IDPM Sussex branch. Stamford Arms, Preston Circus, Brighton. 7.00.

MAY 7

Introduction to the MB29. BCS Preston and district branch. The Polytechnic, Preston. 7.30.

MAY 11

AGM followed by The Society and its Membership. BCS East Anglian branch. Norwich Union Social Club, Pinebanks, Norwich. 7.00.

CONFERENCE

planned. Details from Christine Dagnall at the IEE on 01/240/197 ext 280.

■ THE European Consumer Electronics Show (ECBS '81) scheduled for May 10-13, has been postponed for one year and will now take place in May 1982. The venue remains the Nürnberg Fair Centre in West Germany. Revised exhibition dates will be announced by the organisers, Gewerbe und Trade Faire Ltd, within two months. The event has been postponed, because participating exhibitors have indicated that manufacturers in new product areas are having difficulty in matching supply with demand levels. Others in the more established consumer electronics field have postponed new product launches. Further information from UTE on 01/240/705/6707.

■ MICRO Fair '81 will be held at the Hawthorne Hotel, Bristol from June 12-13. Organised by the British Computer Society, the aim of the event is to disseminate information and promote small business and public awareness of current microcomputer developments. Enquiries to P. Hemming on 01272 633871 ext 204.

■ A TWO-DAY colloquium has been organised by the Institution of Electrical Engineers. It will be held from June 9-10 at the IEE in Savoy Place, London, and the venue will be Technological Developments in the Office of the Future. The meeting will examine the impact of automation on the Office of the Future and highlight the technical aspects that will make such developments possible. An exhibition of the equipment mentioned in the papers is

more about what he actually does than will the job description. To determine a stock level, it is ultimately necessary, as every auditor knows, to go to the warehouse and do some counting. Concepts in the minds of users are not wholly reliable.

Let us consider how this definition of objectivity might affect the model proposed in Figure 1.

If you walked into a hospital by chance, you might observe the people inside before realising what roles they were playing. A basic entity, therefore, should be PERSON. We do not assign attributes to DOCTOR and to PATIENT, as separate entities, knowing that one may have to be built into the physical imple-

mentation a special way of linking them back together. Attributes of a PERSON naturally belong to a PERSON entity. It may be only infrequently that a person is both a DOCTOR and a PATIENT, but it is misleading to regard them as distinct entities.

We can directly observe people acting as doctors and patients. A person is in the role of patient because he has a relationship with the hospital, he may receive medication and treatment, or at least he can expect them. Such roles are only meaningful, in terms of our theory, in the context of such a relationship.

We would not write down DOCTOR as an entity type, but establish a relationship, say ACCEPTED BY, linking PERSON and HOSPITAL. Having done this, we call the role of the

body, the Science Research Council, will help with this work. Any one who would like to collaborate is invited to get in touch.

It may help readers of the series on data analysis if we use an example from the series. Figure 1 is the model of a hospital appointment system which was produced by data analysis.

Data analysis is concerned in this hospital case study with entities ("anything relevant to the enterprise about which information is or could be kept") and meaning ("defining what things in the enterprise mean is the most important part of the job").

We also adopt this point of view, and go on to develop it further.

The importance of making sure that the contents of a database are meaningful cannot be over-emphasised.

Given the context, it is clear which is the meaning of the EMPLOYED-AS-A-DOCTOR entity. Whatever the context, DOCTOR cannot be valid as an isolated entity for a period of existence is not meaningful. It needs to be thought of as a role.

This slotting in of concepts to an unambiguous place in the model is important. It encourages the production of a standard, stable model of the organisation. Any alterations in the model can then be seen for what they are — necessary aspects of the compromise to fit the model to a DBMS schema. We would represent this unified view of "entities", "relationships", and "attributes" as entities in Figure 2.

It is true that there are abstract ("conceptual" is a term we avoid) entities and relationships such as "Theatre Session" and "PATIENT" is wait listed for "WARD". We shall see later, however, that there is no need to take such concepts on trust.

What is common to entities, relationships, and attributes is that they all have periods of existence; a person has a lifetime, a doctor is contracted to work in a hospital for a specific period, and a person has a certain blood pressure at a given time. (How to assume what values it has between observations is a matter for medical theory or clinical judgment, and represents an abstraction based on the primary data.)

There is no need for three constructs: entities, relationships and attributes. In Legol only entities are employed. The advantage of this is that two analysts may model the same thing in two different ways, for example, one as an entity, the other as a relationship.

According to the Legol theory, only those entities should be defined for which there is a meaningful period of existence and for which we can specify how their existence is established or identified in the organisation.

To identify an individual such as PERSON, we need to know the name and a procedure, relevant to a context, for identifying the individual given the name. This basis of meaning is exactly what a manager needs.

For him, information from a computer system should be connected securely to actions which can be taken or events which have happened.

Abstract entities (called, by others "conceptual entities") are related to more concrete entities. The identifier structure which Legol contains imposes this discipline.

The two following articles will explain other innovations which enable Legol to reduce the arbitrariness in schemas. Current methods of data analysis go a long way in this direction, but our research shows that far more has to be done.

As a follow-up to Data Analysis (concluded last week) this three-part series describes aspects of the Legol project

Direct observation gives the best data for programming organisations

by Ronald Stamper and Peter Mason

FOLLOWING the series of articles on data analysis, readers might like to know something about the research being conducted in this field. This article and two subsequent ones will describe the relevant aspects of the Legol Project.

Legol is a language for systems analysis and design which is being developed at the London School of Economics. It will enable the analyst to specify how an organisation works or should run by writing its rules. Legol is a language in which legislation can be written precisely and formally. When you use it, it is as though you were programming an organisation.

The project was started in 1974; for Legol-1, Susan Jones, now of City University, worked on Legol-2 and Clare Tagg, of the London School of Economics, wrote the interpreter for Legol-2.1. Jo Marks, the latest member of the team, is working on a technique called Semantic Analysis which is claimed to have the flexibility to allow the analyst to late change of mind. Semantic Analysis is a by-product of the Legol project.

Information about the project can be obtained by writing to them at the London School of Economics, Houghton Street, London WC2.

Legol — Part 1

SRG funding began in 1974;

for Legol-1, Susan Jones, now

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change of mind. Semantic

Analysis is a by-product of

the Legol project.

As a by-product, you are also

writing a computer program in

a very high-level language. Legol

has an interpreter. However, not

all the operations performed in an

organisation can be performed by a

computer. Judgments have to be

made by people, and so do most

observations and actions. Thus

Legol also specifies, as accurately

as necessary, these human actions.

The interpreter handles these by

generating a dialogue.

A language for programming an

organisation cannot be designed

without giving special attention

COMPEC EUROPE PREVIEW - 1

Compec Europe in Brussels has attracted over 50 exhibitors to the Place Rogier exhibition centre for the three-day show starting on May 5. In this three-page special feature we first report on the

companies making the trip to the heart of the EEC market, and then turn the spotlight around to see how foreign-owned companies have established themselves in Britain.

Showcase of the DP industry moves into the EEC capital

by Anthea Ballam

microcomputer enthusiast. An entirely new microcomputer will be shown by Fimeca, a model called the F 1300. Fimeca also represents Cipher Data Products in Belgium, and a tape drive with micro-streamer will be demonstrated.

The ubiquitous Apple microcomputer will be shown on the stand of Bell Telephone Consumer Products. The latest model, Apple III, will be featured in conjunction with a host of colourful and useful peripherals.

Another well-known micro, the Zilog, will also make its presence felt on the Heliograph PVBA stand. Here again we are promised some useful add-ons in addition to a low-cost multi-user system designed by the company, the Onyx.

One of the best known names, regularly featured at Compec, is Hewlett-Packard. The products on display will include the 7200C, 7220C and the 9872C series of graphics plotters. HP is clearly enthusiastic to emphasise its products in the peripheral arena. The high quality HP 7580A drafting plotter will be highlighted although the company will not overlook its proven products in the mini and microcomputer market. The company's own personal computer, the HP-85 will be seen at Compec Europe alongside a microcomputer development system, the HP 64000.

Another famous name at the show will be General Automation. The chosen star product will be the Nicode software which will be run on GA-16/200 and GA-16/400 series minicomputers. This system allows applications software, particularly those for business functions, to be generated at high speed, eliminating coding procedures and manpower costs.

An important Belgian participant, Prodata, will be making the most of its acclaimed point-of-sale products, a major representative being the model C70. A fully programmable and modular unit for stand-alone sales and stock recording applications, the C70 offers between 160 and 560K of mass storage, and a choice of add-on facilities. The company will also feature the Omega word processing system which has also proved highly successful in the UK, marketed by Prodata's sister concern, Compucorp.

Peripherals for DEC minis will be demonstrated on the NV ASAC stand. The exhibition will provide a splendid showcase for the



Hewlett-Packard's Personal Graphics System, to be seen at Compec Europe, is made up of an HP Series 80 personal computer (centre), plotter and flexible disc memory, and an HP 9111 graphics tablet (in use, right).

CAT, the computer aided tutorial terminal from Prodata, will be on show in Brussels.

As usual Compec will also provide an opportunity to see the latest terminal products. From MSI Data International a full range of terminals will be seen, including new user-programmable portable units.

A video display terminal with microprocessor control and a special non-glare screen will form part of CompuData's offering. Called the model TVI 9128, it offers a keyboard with both upper and lower case characters, a screen with 24 lines and 80 characters. Its sister terminal features an alternative typewriter-style keyboard. Other items will be a video printer and a selection of new matrix units.

Another microprocessor-based terminal product of interest will be the range from Telesprint Benelux. Here again a comprehensive video display feature will be shown with a selection of matrix printers offering a choice of speeds and capabilities.

The established Telesprint Benelux range will reveal the Graphic 7 vector refresh terminal system and the Model 31 Colour Graphics Hardcopy Unit. Printers from the Calcomp range will also be highlighted including the drumplotter model 1051. This will generate up to A0 width drawings by means of four program selectable pens.

Historically Compec is a peripheral show, and companies that display a selection of these add-ons retain the true spirit of the exhibition. For example C.N.R. has promoted a host of items, varying from a new range of 16-bit memory modules.

A company specialising in Euro-board products, Gespac will display a computer module based on a 68000 microprocessor on a 160 x 100 mm standard board. Compatible with all the interface modules specified for the G-64 board, the module is designated the GESMP144 and will be shown with a variety of 16-bit new memory modules.

The exhibition will provide a splendid showcase for the



A self-contained hand-held data entry and communications terminal, the Scorepac, will feature on the Eurodata Systems stand.



COMPEC EUROPE PREVIEW - 2

Robin Laurance asks if foreign companies can be expected to step up their UK investments in today's climate

IBM is backing Britain because 'you can't beat it for value in people'

SOME 20% of the UK's manufacturing industry is operated by subsidiaries of foreign companies. It is a statistic the government is happy to talk about.

Ministers are not quite so happy when they are forced to admit that without that considerable foreign investment, the economy as a whole and the level of unemployment in particular, would be even worse than it is already.

In short, without those foreign investors, the British economy would be in ruins, not just in need of urgent repair.

But in today's decidedly unhealthy climate, can those foreign companies be expected to further their investments here?

According to Jacques Maisonneuve, chairman of IBM Europe, the company's two British plants are as productive as any they have anywhere. "In fact," he said recently, "they are sometimes more productive."

Making that kind of investment,

and investing in the company's own research and development programmes, is something the British government is naturally keen to encourage — and with some very real benefits.

Capital expenditure on scientific research and certain machinery and plant qualified for 100% first year allowance against profits for corporation tax purposes — which Morgans finds very attractive.

Other factors which make investment in the UK desirable are less easy to quantify and therefore have weaker followings. There is the underlying belief among the company's marketing men that a manufacturing presence is important, and with a row blowing up in Brussels over IBM's alleged breaches of the Treaty of Rome, a manufacturing presence in Europe would seem to be particularly essential.

"Our markets here," says Morgans, "are dynamic — enormous. We firmly believe that when industry sorts itself out and the economy takes off again, demand for the opening planned for 1983.

But why invest in a country whose economy is in difficulties?

He might even have gone further. The establishment and

continuing growth of the research and development centre at Hursley, near Winchester — a centre which serves IBM worldwide — is an indication that at the highest level of computing skills, the quality of British scientists, mathematicians and engineers is rather better than elsewhere. IBM is not the first foreign-owned company to invest in British brains.

"In price, quality and delivery," says Morgans, "we have suppliers with proven records."

To overcome any reluctance among component manufacturers to invest, the company uses its own capital in the form of tooling and inventories to help launch new component lines.

Making that kind of investment, and investing in the company's own research and development programmes, is something the British government is naturally keen to encourage — and with some very real benefits.

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"Our markets here," says Morgans, "are dynamic — enormous. We firmly believe that when industry sorts itself out and the economy takes off again, demand for the opening planned for 1983.

But their quality at all levels," Morgans adds, "is as good here as it is anywhere."

He might even have gone further. The establishment and



MAISONROUGE . . . "Our British plants are sometimes more productive than the others."

further its investments in Britain.

Because the computer market in the UK is one of the most competitive outside the US, the company seems bound to keep a strong presence here.

"Our markets here," says Morgans, "are dynamic — enormous. We firmly believe that when industry sorts itself out and the economy takes off again, demand for the opening planned for 1983.

Jacques Maisonneuve summed it up this way: "If there is good management, you can do well in the UK. I have full confidence in the ability of the UK not only to survive but to get out of the present crisis".

small businesses ready-made for small machines.

"And as the cost of labour here continues to rise to match those elsewhere in Europe, there will be an even bigger demand for our products".

Jacques Maisonneuve summed it up this way: "If there is good management, you can do well in the UK. I have full confidence in the ability of the UK not only to survive but to get out of the present crisis".

ouncement of a major Japanese car company opening a large factory in Wales produced conflicting statements among trade unions. One union showed hearty approval, while the white collar division of the Amalgamated Union of Engineering Workers AUWE-TASS did not.

The Union's general secretary, Ken Gill, pointed out that such a scheme would bring little work to British designers. He also said that although the Japanese company had given assurances that they would use predominantly UK components, there were no guarantees to this effect.

TASS has made repeated attempts to protect indigenous British manufacturing interests, and drafted a strong recommendation to invest and support the UK electronics industry some six years ago.

For the overseas investor the contribution of the trade union is far from negative. Some of the more progressive organisations find union suggestions and recommendations on wage levels serve a practical use. Similarly the union can offer advice on management structuring and safety measures.

Scotland is evidently an ideal place for manufacturing equipment, but with current government incentives and grant schemes there is potential for investment in the length and breadth of the country.

A trade unionist expressed the belief that the UK is now recognised by the progressive international investor as an ideal environment for setting up a new venture, particularly for production.

Recently there has been increasing evidence of Japanese interest in the UK. British trade unions have viewed this interest with mixed feelings. The an-

Slimmed-down Britain offers big returns to overseas investors

WITH optimistic predictions that the UK recession is on the decline, it seems that now is a good time for US and international investors to set sail for British shores.

Britain has long been viewed as a vital key to the European sales arena, both by virtue of its geographical position and its language.

Within the British Isles alone the potential market embraces some 56 million people, while the European scenario includes a further 250 million.

For pioneering commercial

ventures this must be a tempting

prospect, although some national

Europeans are not happy to

view themselves as virgin (mer-
ket) territory.

General de Gaulle knew well that the UK provided a gateway to US expansion and industrial development in Europe. He spent many years fighting to exclude Britain from the EEC for this very reason.

Luckily his negative influence on this matter, at least, did not prevail.

A certain amount of sentiment

was expressed about the historical

significance of the acquisition, but

little sentiment was spent on the entire workforce of the Portsmouth production facility and service engineers that were made redundant.

Rockwell wanted a UK base and an importing office to sell low-cost Japanese calculators. It achieved this end — and a great deal of ill-will into the bargain. Undoubtedly not everybody welcomed

US conglomerates into the UK particularly if they have conducted themselves in the same manner as Rockwell International, but at one trade unionist pointed out, many overseas manufacturers in the UK are better employed than the

US companies that include both Honeywell and IBM.

NCR, like NCR, is known to be a good employer, although unlike NCR it has not suffered the extreme disarray of changing from electro-mechanical to

digital computer technology. Its

biggest problem is that it has

been unable to find a suitable

location for its new plant in the UK.

The healthy and open approach to overseas investment in the country has not always proved an unqualified success for the indigenous working population. An unfortunate example took place in July 1973 when Rockwell International, the major US electronics

manufacturer, decided to be the first to enter the British market by establishing a new plant in the south of England. The new plant, which was to be called the Rockwell International Electronics Division, was to be located in the town of

the NCR Corporation (since the National Cash Register Company) has grown and developed with the UK, without official union recognition. This in itself is an indication of the considerable contentment shared by its own employees.

Sumlock Anita carried a badge of some historical significance; it was responsible for the world's first electronic calculator.

Following the prototype produced by Kitts and Spark in the late 1950s the first model was sold in 1964. Some ten years later the company had a staff of 1,500 with offices and service facilities across the country and a sizeable factory in Portsmouth.

The trade unions in Britain, which have earned an unflinchingly bad reputation abroad, have mixed feelings about overseas investment in this country. Clearly it is desirable to encourage employment in the UK, and they recognise this. But some measure are known to disturb the unions.

Business opportunities for overseas investment are exceptional in the UK. The eccentric monetarist

economics of the Thatcher government has minimised industrial activity, leaving a thin and hungry workforce that includes a high level of technical expertise, either poorly paid or simply in search of new and better opportunities.

The pioneering overseas com-

panies that have conducted

themselves in the same manner as

Rockwell International, but at one

trade unionist expressed the belief that the UK is now recognised by the progressive international investor as an ideal environment for setting up a new venture, particularly for production.

Many of the major US computer manufacturers in the UK make model employees, although it is accepted that changing times may require drastic measures.

Overall the scope and potential of the UK market for the overseas investor is vast, particularly while there is no restriction on the remittance of profits.

Despite the uncertainty of the UK economy, the financial policy of the present government excludes any adjustment to this measure.

Recently there has been increasing evidence of Japanese interest in the UK. British trade unions have viewed this interest with mixed feelings. The an-

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WE WANT IMS specialists, male or female, to join our existing team of DP professionals and play a major part in ensuring that our IMS systems and services are of the highest quality and that our rapidly increasing use of IMS is cost-effective.
WE OFFER Excellent salary and benefits package including company pension scheme, free life assurance, free BUPA, four weeks holiday - rising to five, generous relocation package and subsidised staff restaurant.

If you want the opportunity to extend your skills please write with career details or telephone for further information and an application form to Ruth Kalinowicz, c/o Rank Xerox House, 338 Euston Road, London NW1 3BH. Tel: 01-930 4030 Ext 286.

RANK XEROX

Our client, a subsidiary of an internationally renowned group, is recognised as a leading manufacturer and supplier, offering a wide range of mini and micro compatible equipment, total computer based systems, operating systems and software.

Their success in this market was reflected in a year when many companies faced adverse market conditions. Despite this they have recently announced record sales and profits for fiscal year 1980 and are currently enjoying similar success and growth. As a result of this, they now wish to enhance their UK sales team in the North and South of England.

Ideally the successful candidate will have been selling within the data processing industry for a minimum of one year. You may also have circa two years engineering experience in computer hardware (although not essential) and be educated to HNC/Degree level or equivalent in electronics. Finally a stable and successful track record is a prerequisite.

Remuneration is by way of a base salary of c£10,000 (according to experience) plus an excellent commission scheme expected to yield in excess of c£15,000. A company car and a range of fringe benefits are also included.

For further information and an immediate confidential interview, for Southern appointments contact Chris Fry on 01-935 0671 (24 hour answering service) or 01-637 8795 (evenings Monday-Thursday) or 021-742 1992 (weekends).

Northern appointments contact Paul Pearce on 021-236 3781 (24 hour answering service) or 021-308 4908 (evenings and weekends).

O.C.R. SYSTEMS ANALYSTS & FIELD ENGINEERS



RECOGNITION EQUIPMENT LIMITED

Because of our rapid expansion in the U.K., coupled with a greatly widened product range, we need additional support staff especially in London and the Home Counties.

Much of our work is in the Finance Market and so IBM 3890 or Cummins Allison experience would be of a major benefit.

Our products span the entire range of Data Entry - high and medium speed document processors, terminal work stations, hand-held O.C.R. readers, page readers, K.T.D., currency processors, mail sorting equipment, etc. We are currently installing the world's first high-speed image processing systems and have a major programme of new product releases in the next 12 months.

Write or call - your application will be treated in strict confidence -



RECOGNITION EQUIPMENT LIMITED

Miss Rachel Whitehead
RECOGNITION EQUIPMENT LIMITED
Auriema House, 442 Bath Road, Cippenham, Slough, Berkshire SL1 6BB - Telephone (06286) 62516

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FIELD SYSTEMS ENGINEERS - LONDON - H. COUNTIES
Start £3K + 0/1 + S/B + 2LR. CAR +++
High growth mini manufacturer - two new branch offices within 6 months - seeks promotable young engineers - next move Tech. Support.

FIELD ENGINEERS - W. LONDON/H. COUNTIES/COAST
Start £3K + CAR + BUPA + OVERTIME etc:

Leading British manufacturer seeks enthusiastic engineers to join young team servicing micro-based systems. Call Keith Walls for details of any of the above (and others) on 01-543-1840 or 01-543 1898

ALLTRONICS PEOPLE
01-543 4844 (egy)

JORDANHILL COLLEGE OF EDUCATION, GLASGOW

The Governors invite applications from suitably qualified and experienced persons for the post of

LECTURER IN COMPUTER EDUCATION

The Computer Education Department provides pre-service and in-service courses for teachers, including a CNAH validated diploma course (and Trinity with Paisley College), and operates a computing service to the College and to schools in the west of Scotland.

It is hoped to make two appointments, and these will be from 1st September 1981, or such date as may be mutually agreed.

The salary scale is £8,200 to £12,012 with 15 points, and increments of £400 approximately. The point at which successful applicants will be placed on the scale will be determined in relation to their salary at the time of appointment.

Further particulars and forms of application may be obtained from the PRIN CIPAL, JORDANHILL COLLEGE OF EDUCATION, SOUTHBRAE DRIVE, GLASGOW G13 1PP. Completed forms should be returned no later than Monday 11th May, 1981.

(5316)

IMMEDIATE CONTRACTS FOR PROGRAMMERS

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Prime Cobol

Prog/Project Leader

IBM-IMS DB/DC

Programmer

P11, MARK IV

Programmer

IBM-Cobol/DL1/VSAM

Analyst/Designer

IBM-Cobol/CICS

Programmer/Analyst

DEC

Programmer/Analyst

IBM-SYS 34-Cobol

Programmer/Analyst

or RPG II

Programmer/Analyst

IBM-Cobol/IMS DB/DC

For further details please contact:

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HAVE YOU CONSIDERED WORKING FOR A SOFTWARE HOUSE?
We can offer variety, training, six monthly salary reviews and travelling expenses.

You must have:
Minimum 3 years commercial background and some mainframe experience

If you have:

Database or TP experience we will help you develop if further.

Please phone: Sheila Fox

Link Associates Limited

24a High Street, Chesham, Bucks, (02405) 4922

Link

NCR 8200 Experience

MALAWI negotiable salary excellent benefits package

Being one of the most stable and pleasant countries in Central Africa, Malawi offers an appealing way of life for the expatriate family.

A major financial institution is carrying out a significant advancement of its data processing facilities by the implementation of on-line systems with remote office access based upon NCR 8200 mini computers.

Our client now wishes to appoint a sound, all round DP specialist for the next phase of development; upgrading to an NCR 8270 with more terminals and additional applications. The person appointed will work closely with the present expatriate manager who has successfully taken the project to its current level.

Applications are invited from people who have a solid DP career covering operations and systems with some supervisory experience but must be competent in COBOL programming in an NCR 8200 or similar environment. Knowledge of CTIME and/or IMOS software will be most beneficial, whilst financial sector experience would be useful.

The appointment is for 2½ years and provides considerable benefits including:

- Free, modern furnished housing
- 25% of total earnings terminal bonus (tax free)
- Allowances and fares for children's education in UK if required
- Company car
- Terminal leave bonus, club membership etc.

This is a very attractive opportunity with an organisation holding considerable standing in an appealing country. Please contact us immediately as client interviews will be arranged in London in the near future. Telephone or write, quoting ref: CW 112-IC.

**CAPP
ASSOCIATES**
01-886 9893

Capp House, 96 South End, Croydon CR9 3SD
Computer and Professional Personnel Consultants

B287

Sales Engineers

Incomes well into the 5-figure bracket.

Now established as a permanent feature of Britain's data communications scene, Codex (U.K.) is expanding its existing sales team to cope with increasing demand for Codex-bred know-how and products.

In its field, the Company is a world leader, marketing a comprehensive, integrated range of products from modems through to distributed communications processors based on the latest technology.

The Sales Engineers appointed will advise prospects on enhancing existing systems and developing new ones, and will sell the products required to implement their recommendations.

Successful selling experience, either in data communications or in related fields.

such as telecommunications and computer peripherals, is essential. Field and in-house familiarisation training will be provided, as necessary. Vital attributes are determination, get-up-and-go, attention to detail and a thoroughly professional attitude.

Salary plus commission produce on-quite earnings of £14k. The Company also provides a car, free BUPA, life assurance, income continuation plan and non-contributory pension scheme - plus relocation assistance, where necessary.

For an application form, telephone or write to Sue Swerlin of Codex (U.K.) Limited, 105/107 Lansdowne Road, Croydon CR0 2BN. Telephone 01-680 8507.

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Codex (U.K.) Limited is a subsidiary of

Regional Data Centre Managers

c.£14,500 + car Cheltenham, Luton, Sheffield

Whitbread are one of Britain's top brewing groups, operating their breweries, distilleries and retail outlets through regional trading companies.

To provide a powerful new information retrieval, management and processing service for the entire organisation, a new Management Services facility is being established. This venture represents a £5½ million investment in a distributed network based on seven IBM 4341 mainframes, 400 VDUs and 60 printers.

Data Centres are being established in Cheltenham, Luton and Sheffield, each with equipment valued at £1.5 million and a staff of 20-25. Each of the managers sought will be responsible to the Group Operations Controller for the regional service provided.

Crucial tasks include the recruitment and development of staff, the development, planning and organisation of hardware changes, and the monitoring of user satisfaction through regular reviews and frequent visits to trading companies.

To match the job profile, you should preferably be educated to degree or equivalent level, with at least eight years experience in Management Services - most of this in a discipline relating directly to the job - and able to demonstrate success as manager and motivator of a technical team. Confident administration of a critical work programme is essential.

Salaries negotiable in the region of £14,500 will be accompanied by a first-class benefits package which includes a company car and a generous relocation package where applicable. These positions are open to men and women.

For an application form, please phone or write to Pauline Pryor, Recruitment Administrator, Whitbread & Company Limited, Chiswell Street, London EC1Y 4SD. Telephone 01-606 4455. Please quote reference HQ/34.

JBA

Analyst/Programmer

to £11,000

A large international manufacturing company is expanding its European operations and wishes to recruit an experienced professional. Applicants must have several years IBM SYS34 and RPG II experience having worked on general commercial applications. It is expected that successful candidates will move into a co-ordination consultancy role involving European travel.

Contact: Brian Postles

Software Designer

£10,000

This young manufacturing organisation of professional computer controlled recording equipment for sound studios and broadcasting, has rapidly established itself as the leading innovator in its field. The software content of its systems is always increasing and will have a central place in the structure and ergonomics of future designs.

The Company's expansion means that they now have a vacancy for a Software Designer with proven analytical skills and who has a specific interest in applying computer control to help make machines more useful and effective.

Applicants should have experience in real-time control using mini or micro computers and should enjoy working in an independent fashion. Added advantages would be a working knowledge of an ASSEMBLER language and of multi-processor systems.

The Company expects to continue its rate of progress and there will always be opportunities for the future career of the successful applicant. Contact: David Hendry

Programmers & Analyst/Programmers

£8,500 - £11,000

Our client, an expanding consultancy is looking for a number of experienced Programmers and Analyst/Programmers to design and develop commercial turnkey systems. Applicants should have at least two years BASIC or COBOL plus the ability to deal effectively with clients and solve problems with minimum supervision.

Contact: Margaret Stevens

Support Analyst/Programmer

Negotiable to £9,500

A well established software house and systems consultancy, is expanding their London office and so have a requirement for Analyst/Programmers to support turnkey projects based on the TI900 range of computers.

Candidates must have at least 3 years experience in d.p. coupled with a sound knowledge of COBOL. An understanding, if not a working knowledge of systems in a financial area, would be an added advantage. Training in the company's products will be given. It is expected that the candidate be self-motivated as this is a responsible position.

Contact: David Hendry

Analyst/Programmer

£8,000

An excellent opportunity has arisen with this well established organisation that is developing their data processing section, and installing new DEC hardware. The position needs an experienced person who can take on the responsibility of programming staff and also make a transition into analysis in the future.

Background must consist of solid BASIC + or BASIC + 2 programming with exposure to the analysis field. The ability to communicate with users, identify and solve problems is of prime importance.

Good prospects are coupled with excellent working conditions and substantial company benefits.

Contact: Janet Clivins

Communications Programmers - Babbage

£8,000 - £9,000

Continuing expansion of our client's international Videotex business has created opportunities for GEC 4000 Babbage programmers in real-time and network systems.

Applicants should have at least four years programming experience and be capable of tackling packet switching, colour and business graphics. In this fast moving and exciting field, possible overseas travel.

Contact: Jim Baker

JAMES BAKER ASSOCIATES
International Personnel Consultants,
32 Savile Row, London W1
Tel: 01-439 9311

Targa

SENIOR PROGRAMMERS

c. £8,000

A chance to assist with the design and implementation of major on-line systems is provided by a prestigious Kent-based Insurance Company. Aside from the challenge of linking a large number of remote sites, the company offers a wide range of benefits including MORTGAGE facilities and FLEXITIME. In return the successful applicant will demonstrate a COBOL background and supervisory skills gained in a formal environment, preferably during the development of on-line and/or Database systems using large UNIVAC equipment.

Ref: R3005

ANALYST PROGRAMMER

c. £8,500

You may have 2-3 years' programming experience and possibly a limited amount of analysis. If you would like to see your career tend more towards design, our clients may be able to offer the chance you need. Commercial applications experience utilising CICS COBOL and TOTAL would be particularly advantageous when allied to an enthusiastic and hard-working approach. Plenty of development work in a small team.

Ref: R3233

PROGRAMMERS

c. £8,000

With 2-3 years' BASIC+2 or AIMS experience you could be in line for an interesting opportunity with a major International Banking Group. Excellent promotional prospects are available in a development environment together with occasional EUROPEAN TRAVEL. A comprehensive range of benefits including MORTGAGE SUBSIDY is available.

Ref: J3287

SHIFT LEADER STATUS

c. £9,000+

A large well-known company have a requirement for an experienced Senior Operator to enhance their expanding Data Processing Department. The successful applicant will probably have a minimum of 8 years' experience within a computer environment and have extensive knowledge of MVS/JES2 and also be conversant with VTAM, VSP & TSO. Excellent chances for CAREER PROGRESSION exist with this company. A vacancy at the same company also exists for an operator with 2 years' MVS/JES2 experience who is looking for a CAREER OPPORTUNITY. Ref: D3377

OPERATORS URGENT

c. £6,000+

A manufacturing company in Essex is looking for operators for their site. A minimum of one year's experience on ICL 1800/2900 under GL/II is required. Good company benefits include discount on products and a Bonus Scheme. Good chances for promotion available to the right applicant. 2 shifts only.

Ref: D284

TARGA COMPUTER SERVICES
6 LIVERPOOL STREET
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01-283 9941

24 HOUR ANSAPHONE

SALES EXECUTIVE

c. £15,000+

An outstanding opportunity exists for a computer professional to join the UK subsidiary of a well established US Company engaged in marketing highly regarded data entry equipment which includes OCR, Key Entry and a new and unique Image Processing capability.

You will have acquired a wide experience of business applications and will have the ability to design cost effective system solutions which best meet the specific needs of each customer. You will have developed and presented sales proposals and will be capable of dealing with customers at senior management level.

The appointment carries a generous basic salary plus a sales incentive bonus scheme based on a realistic annual quota. An earnings guarantee for the first year is included with other benefits.

SALES SUPPORT ANALYST

c. £10,000+

This position will interest experienced analyst seeking a new challenge and an opportunity to work in a sales team. The job is to provide optimum assistance to the sales effort. This includes systems investigations, proposals, benchmarks, customer presentations and installation support activities.

You must be self-motivating with the ability to communicate effectively. Some experience of OCR and Key-to-Disc techniques would be an advantage.

Earnings benefits include participation in a sales incentive bonus scheme.

Please write with full details on your career to:

The Managing Director
S. O. Systems Ltd.
38 Sunbury Cross Centre
Sunbury, Middx. TW16 7AZ

SO

NORTHERN RECRUITMENT ADVERTISEMENT FEATURE

More jobs in product selling—but where are the experienced people?

by Martin Sidebottom
THE number of computer-product sales vacancies has shown a marked improvement right across the board during the last quarter. This is in contrast with the continued gloom and despondency with which the media generally bombard us.

The sudden downturn in June 1980, when experienced successful sales executives could not find good opportunities, reversed in November and has been steadily improving ever since.

Now, the picture is very healthy and leads to an interesting problem: The vacancies exist, but there is a significant lack of interest from experienced people with a good track record. I can only assume that this is a reaction to the general atmosphere of uncertainty.

Another interesting change is in the parameters which employers are using to identify the sales executive entering or moving into the market and whom they wish to recruit.

Once a successful track record has been established, the path to the top for the career oriented is a bit like the Hampton Court maze.

The management option is not necessarily the most attractive route. If income is the prime motivator in the short term, the top

salespeople more often than nor earn significantly more than senior managers.

The choice of management or new product is important in this respect. If the latter is chosen, the move can be to a number of related environments. However attitudes seem to be biased in some of the sales executives I meet.

Some of the options available are: Mainframes; bureaus; minis/micros; soft-

The bureau sales executive can fill his client's needs more appropriately than a one product manufacturer or distributor.

ware services and consultancy; combined word processor and data processing applications; selling for OEMs; peripherals and network systems; computer room furniture; magnetic media; stationery and forms.

This list demonstrates the variety of products available in the market, but, as with every other industry, myths distort the true picture.

An example is the bureau.

Bureaus continually receive a bad public image in the sales profession as an outdated method of data processing and a difficult service to sell.

In reality, the product package, using powerful mainframe processors, running batch or online terminals, with the options of front end processing, an additional choice of centralized distributed data processing systems, together with standalone minicomputers, gives the bureau sales executive a vast arsenal of products. He can therefore fill his client's need more appropriately than a one product manufacturer or distributor.

A number of "self-styled" high fliers have parted company with their old employers or are at present falling in their need to maintain target income and standard of living. This may cause the sales manager difficulties in sorting the wheat from the chaff. The candidate must solve this problem for him.

The applicant should produce third party information to support his case, early in the interview and satisfy the sales manager with evidence of results which demonstrate achievements against targets, league tables, installations, applications and price figures that have been achieved.

The applicant has responsibility in a buyer's market to establish his past record of successes.

It is now apparent that guarantees are generally

careful consideration must be given to the variety of opportunities available. More often than not, a good recruitment organisation can be invaluable in identifying the problem and providing the solution for the individual in this highly complex market.

The problem of selling yourself to the new employer vital to receiving a job offer in the first place and, secondly, attracting a substantial salary package.

A number of "self-styled" high fliers have parted company with their old employers or are at present falling in their need to maintain target income and standard of living. This may cause the sales manager difficulties in sorting the wheat from the chaff. The candidate must solve this problem for him.

The facts and figures were a sales track record of success and failures since 1966, his 1980 P60, his present employer's year to date pay slip and full details of his achievements clearly showing his ample abilities.

The client, after the initial interview, said he was the most professional salesman they had seen for some time, and intimated that if he was successful in the field his management career would take off within months.

The bottom line to this

extremely negotiable. Therefore, it must be up to the sales executive to prove his worth by producing year to date pay slips and other evidence as available.

This was demonstrated the other week when a capable salesman came to see me and I introduced him to

those currently selling within the computer field would be well advised to consider the new opportunities continually arising within the market.

a large well known company. As a result of his presentation, based on facts, figure and personality, he obtained for himself a senior sales position with a substantial non-returnable guarantee, plus a very respectable basic salary.

However, those currently selling within the computer field would be well advised to consider the new opportunities continually arising within the market.

For example, does your present employer offer the foremost rewards package available? Two companies with similar products and marketing approach pay vastly different salaries to two sales executives.

A quota of £300k with one company will produce earnings c. £19,000 p.a. while with another it will realise £45,000 p.a.

The question any sales executive should ask are: Am I selling the right product in today's market place? Will I have the right product tomorrow, and am I realising my full earnings potential?

Martin Sidebottom is manager of ATA Selection and Management Services, Manchester branch, covering all their recruitment activities north of a line from Stoke-on-Trent to Lincoln and up to the Scottish border. ATA specializes in sales, computer and engineering recruitment, with a network of nine branches covering the UK.

NORTHERN RECRUITMENT ADVERTISEMENT FEATURE

Computer Sales People...

Just seven years, that's all it's taken for Systime to become Britain's No. 1 manufacturer of interactive business systems in the fiercely competitive computer industry—that's some track record.

We're looking for top sales executives who can live with the pace and help maintain our No. 1 position.

On target earnings £20K

Ideally with experience in selling computers, although a proven track record in selling interactive

business equipment would be acceptable. A good basic salary plus generous commission becomes £20K on target. Many of our sales executives earn a lot more. Big company benefits apply including a good company car.

For details contact:
Steve Williams on Leeds 702211
(evenings 7pm to 9pm Thirst 0845-567415) or
write with brief career details to:

Recruitment Manager,
Systime Limited,
Concourse Computer Centre,
432 Dewsbury Road Leeds LS11 7DF
Interviews will be held in all major cities throughout the UK

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one

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data scene

OPERATORS**ICL OPERATIONS SUPERVISOR**£7,000
B.8022**DATA CONTROL CLERKS**£6,200
B.GEN**ICL 2900 OPERATORS**£26,500
B.5198**PDP 11/70 OPERATOR**£67,000
B.5788**OPS/SNR. OPS/SHIFT LEADERS**

HIGHLY COMPETITIVE SALARY

IBM 4341 OPERATORS

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IBM 4331 OPERATORSc. £7,000
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IBM 4341 OPERATORS

c. £5,000

IBM SYS 34/DATA CONTROL

c. £5,000

IBM OPERATIONS

c. £5,000

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c. £5,000

Do you want to be part of a success story for the 1980's?

Excitement, Enthusiasm and Expansion are the key words to describe Computer Resources, one of today's fastest growing UK Computing Services Companies.

Established in the early 1970's, we have gained considerable experience in Systems Development, Hardware/Software Product Services and Total Computing Solutions allied to Bureau Services. Armed with this experience, we are able to combat the gloom and despondency which surrounds us to enjoy the success so rightly deserved by a professional committed company.

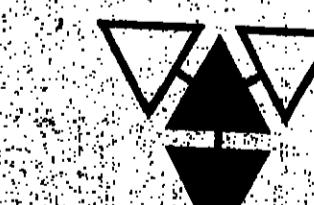
Computer Resources is also independent. Unlike many of our competitors, we can react quickly to meet market trends, fulfil expansion programmes and make contract decisions without time consuming consultations demanded by Parent Companies. This freedom is allowing Computer Resources to race to the top of the Computing Services league and we believe the 1980's will see us as the leading independent UK Computing Services Company. **Do we sound like your kind of company? If so, read on.**

We are looking for data processing professionals who will be based at Computer Resources data centre situated to the West of London. Previous experience in providing IBM Computing Services to a wide range of commercial and industrial clients is essential, as is an ability to build good personal client relations within a Computing Services environment.

Senior positions will demand strict appreciation of management control in a profit-making environment and will involve travel to Europe and the Middle East. Any language knowledge would be beneficial.

Positions include:

Data Centre Manager - Package to £15,000 pa
To plan, direct and co-ordinate the operation of Computer Resources expanding data processing services in the UK and overseas. Experienced management of significant commercial IBM installations providing clients with a high level of service is essential.



**COMPUTER
RESOURCES**

01-936 0671

Operations Staff - Package to £10,000 pa

Senior Operations staff with proven experience in IBM operating systems - MVS, VM/CMS, DOS/VSE. In addition, client contact will be required to ensure the successful processing of data.

Technical Services Manager - Package to £20,000 pa

To take responsibility for all software installation and operation for Computer Resources' multi IBM mainframe configuration including a substantial teleprocessing environment. The successful applicant will also be responsible for the promotion of technical support services provided to clients on an increasing level.

Systems Programmers - Package to £15,000 pa

To work in-house and on-site to support clients' systems. Applicants must have proven experience in one or more Database systems, MVS/TSO, VM/CMS, DOS/VSE, VTAM/TCAM, STAIRS, ATMS, CICS and telecommunications.

Systems Analysts - Package to £15,000 pa

Senior staff with experience in the design, implementation, management and support of a wide range of commercial on-line systems.

Applications Programmers - Package to £10,000 pa

All levels of personnel with sound experience to join a large team on a prestigious on-line project. COBOL on IBM hardware and ADABAS experience is particularly relevant.

Are you our kind of person? If so contact:

The Personnel Manager
Computer Resources Ltd
Walkden House
Melton Street
London NW1 2EB
Telephone: 01-388 2577

Computer Resources' Professional Services Division also has vacancies for experienced systems and programming staff in its London, Coventry, Birmingham, Leeds and Manchester Branches.

Applicants should contact the Personnel Manager.

DP MANAGER	REAL-TIME SOFTWARE	USA
Management potential experience in implementing first-time users and supervising a small staff required for DPM position within a leading Accountancy firm in the City. Programming experience necessary, excellent projects. c£9k	Team Leaders and Managers with 5-7 years real-time software in telecoms, networking or similar required for a number of European projects. Experience in software tools and testing (micros) of particular interest. from £14k	Programmers, Analysts/Programmers and Analysts with medium or large scaled IBM experience and a Cobol programming background required by Systems Consultancy firm in the U.S.A. Initial interviews in London. £ Neg.
DEC 10 IBM	SYSTEMS DESIGNERS	
Programmers and Analysts/Programmers with PL/I, COBOL or Fortran experience on IBM mainframe or DEC 10 equipment required by Manufacturing Company to meet planned expansion of computer facilities. Applications range from commercial/Location to production/process control. Location West Holland. to £14k	Project Leaders and Micro Systems Designers wanted for Dutch Automation Company: experience sought includes Assembler plus one or more of Pascal, Fortran, Coral 60, RTL/2, knowledge of data transmission/data collection techniques, previous design & implementation of real-time industrial systems. to £15k + car	
IMS SPECIALISTS	FORTRAN	RPG COBOL
Consultancy level positions in Holland and Germany for IMS Specialists with at least 6 years experience in the DB/DC field. CICS experience also of advantage. Languages an advantage, not essential. to £20k	Fortran Programmers required in London, Home Counties and Cambria for a variety of tech. support/programming roles including graphics and engineering. 3+ years experience. £7.5-9k	Programmers with RPG or COBOL (System 34 equipment especially desirable) and Financial Analysts sought by Dutch Consultancy and Systems House for a variety of new and existing projects. £10-15k
JUNIOR CONSULTANTS	MICROS & MINIS HOLLAND	
Project Managers (aged 26-36) wishing to progress into a consultancy role required by Financial Systems House for their London and Manchester offices. Experience of implementing commercial systems (pref. DEC, DG or IIP) essential, plus professional and presentable image. c£15k	Hardware and Software Specialists urgently sought by Holland-based Systems and Software House: for hardware positions 5+ years exp. on minis or micros required, software engineers should offer 3+ years commercial, DG or IIP pref. on micros or minis (DEC, DG or IIP pref.). £11-16k (S100)	
MATRIX D.O.C. Lic. No. GEA/14127	10 Grenville Place London SW7 4RW 01 373 3063	

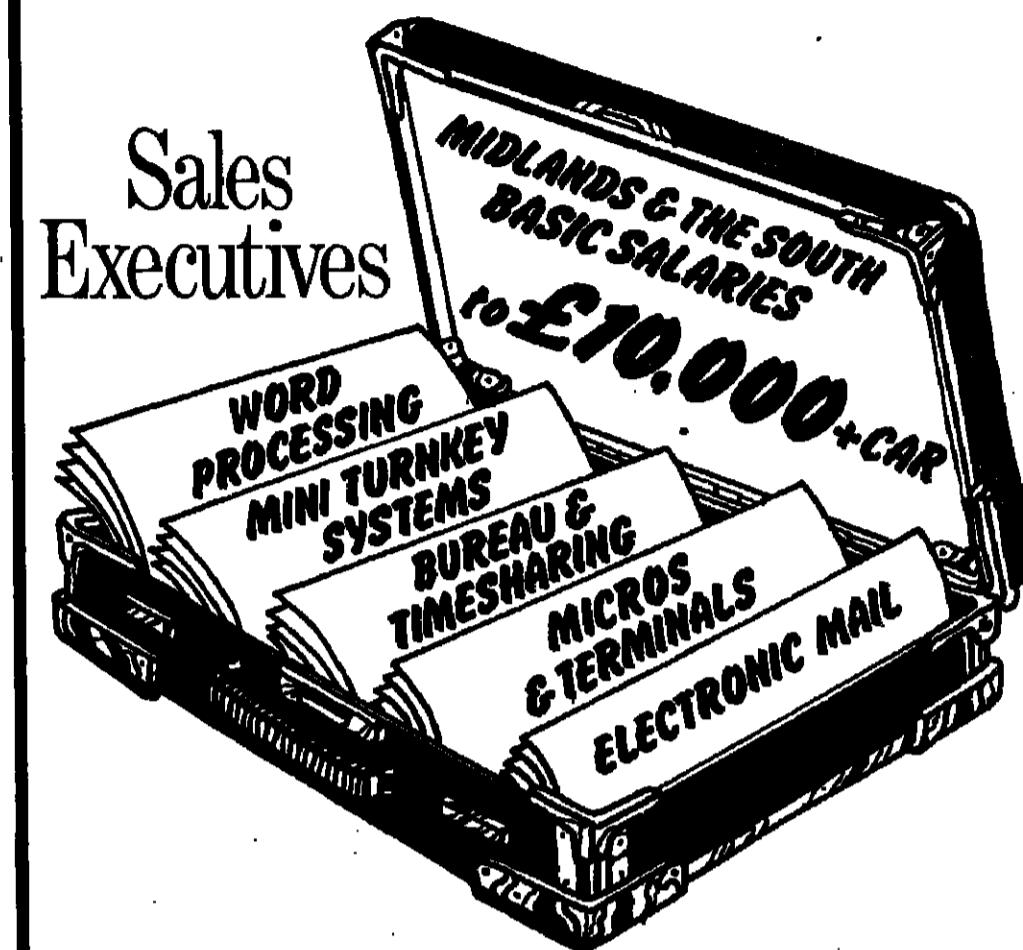
SCIENTIFIC PROGRAMMER for COMPUTER AIDED DESIGN

Mullard Southampton is a leader in the dynamic world of the silicon chip; we design, develop and manufacture MOS integrated circuits. One of our key areas is the Computer Aided Design activity which is essential in the design of integrated circuits. We now offer you the opportunity to join us at the forefront of the micro-electronics world - we need someone (male or female), with programming knowledge and experience in a scientific application, preferably Fortran or Algol, to join our CAD team. The work is varied - ranging from creating systems to programming on dedicated computers - 128K word SEL 32/55 computers with Tektronix graphics. You will probably have a degree in a relevant scientific subject with an appreciation of electronics and be able to demonstrate to us a practical aptitude in using computers. Salary will depend on the experience you can offer us and there are excellent fringe benefits, including generous relocation expenses where necessary. Please write with details of your qualifications, experience and current salary to: John Walls, Personnel Officer, Mullard Southampton, Millbrook Industrial Estate, Southampton SO9 7BH. Or telephone Southampton (0703) 778533.

**Mullard
Southampton**

How's This for Openers?

Sales Executives



How many times in a competitive situation have you been knocked out because you couldn't supply the service or the solution?... Too many for comfort? If this is what you're experiencing then we have something to offer and introductions are in order.

THE COMPANY

We have the permanent resource of over 1,000 professionals capable of supporting a spectrum of business and technical applications as diverse as the market itself.

Our approach is totally professional with an ongoing policy of technical innovation and excellence geared to a systems capability second to none.

THE FUTURE AND YOU

We are currently in the top ten of UK Systems Houses but we mean to go higher. To drive us there we need to immediately hire at least three experienced technical Sales Executives who can claim a successful track record of selling computer based services.

If you feel that you have the ability and the desire to succeed then we can promise you unlimited scope in your technical and personal career.

For a brief qualifying discussion and immediate interview telephone ALAN CARNELL.

ON 021-236 8781 (24 hour answering service)
OR 021-784 6069 (evenings and weekends, 7-9 p.m.)



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Manchester 061-833 0427 Blackfriars House, The Parsonage, Manchester M3 2JA.
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The challenge of major systems development for a software oriented professional
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British Airports own and manage seven major airports in the UK. At Heathrow, the world's busiest international airport, we operate a sophisticated computer system - based on microprocessors linked to a network of minicomputers - to control everything from the location of aircraft on the ground to arrival/departure boards and in-house teletext systems.

We need an experienced person to lead a small team developing similar systems as well as reviewing and updating existing systems. Such applications demand outstanding reliability and achieving this presents a unique challenge for a professional who enjoys working

British Airports

(B313)

Senior Analysts/Programmers.

If it's scope you're after - come to Chichester. (for £8379 - £10182 p.a.)

Picturesque and historical Chichester is not the first place you might think of when it comes to advanced systems applications, so you will be surprised to hear a few facts.

The computer group within the engineering and surveying department at the County Council's headquarters have the enviable reputation for being amongst the leaders in systems development. They have the hardware to back them up, including VAX with extensive graphics equipment, supplementing the IBM main frame.

You will also be surprised at the variety of stimulating projects covered including: traffic analysis, structural design computing, transportation modelling and cost related systems. It is hoped that in the near future 5 area offices will be brought on-line to the YAX system.

West Sussex County Council

5319

Help us to shape the future

EXPERIENCED DEVELOPMENT ENGINEERS & MICROPROCESSOR PROGRAMMERS

We have an important client in the Merseyside area, who due to growth in Marketing opportunities, has the need to expand their development capability.

Over the last few years they have been developing and exploiting a specialised area of secure communications, involving state of the art techniques in digital electronics and microprocessors.

Ideally, candidates should have had 4 years' experience in Hardware or Microprocessor developments, preferably within the field of communications and possess a 1st or 2nd degree in appropriate discipline.

Successful applicants will have the real incentive of developing totally new technology in an exciting field, with achievements rightly influencing their promotion.

All re-location expenses will be paid, excellent negotiable salaries are offered and the conditions of employment are those associated with a leading, international company.

Please apply in writing with details of experience and qualifications to:

Appointments Manager, WORDATA, 64 Gloucester Place, London W1H 9HL

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Database Designer

IMS DB/DC

The increasing need for information has resulted in our large and diverse User base recognising the value of database technology, and the seeds of change are now beginning to grow. As a company we are starting to 'think' database and IMS DB/DC will be used significantly in future developments. Consequently we are looking for an individual with experience of database design gained within an IMS environment. Several new projects are planned including a Sales Information System which will provide considerable challenge to the successful candidate.

These are ideal opportunities for ambitious individuals to take up vitally important roles in a prestigious IBM installation.

We are a well respected employer who can offer excellent conditions of employment and a technical growth plan to suit the most ambitious. We realise that the skills we are seeking are hard to find and will therefore be prepared to use flexibility when considering each candidate. We are located in a pleasant part of Birmingham offering a superb choice of housing and will offer a generous relocation package to those moving to the area.

To arrange a confidential and informative meeting contact our Advising Consultant MARTIN STAINTHORPE on 021-236 3781 (24 hour answering service) or 021-744 1862 (evenings 7-9pm and weekends).



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IBM DOS OPERATOR £5,500
C. London site require an operator with at least 6 months DOS experience. Opportunity to learn DOS/VSE on a 4341.

IBM OS OPERATORS £8,800
City site currently looking for an operator with around 18 months OS/VS1 experience. Excellent perks include a subsidised mortgage.

IBM DOS OPERATOR £8,200
Operators with 1 year DOS/VS knowledge required by South London installation. Good chance to learn VSE under 4341 and JCL.

IBM OS & DOS, OPS SUPPORT £8,500
2 sites (Central & W. London) require operations technicians with good JCL knowledge and Utilities, for day only position.

ICL 2900/DME OPERATOR £8,500
Expanding installation East of London seeks operators with small 2900 mainframe experience. Perks include a loan and company product discount.

ICL 19/2500 GM/DME OPERATOR £8,000
Large London site currently requires an operator with the above skills to complement the existing team. Due to internal promotion career progression is assured. Excellent perks offered and salary review pending.

ICL VME/B TECH ANALYST £10,000
Large company utilising ICL 2900 hardware is seeking a technical analyst. Applicants should have at least 2 years Cobol programming experience as well as strong JCL and MACRO knowledge. This is a senior technical position and the successful candidate will join a small team involved with the maintenance and development of VME/B and associated software.

This is just a small selection of current requirements. For details of these and others not advertised, please contact us on 01-242 1191 or 24 HR ANSAPHONE 01-242 5994.

Apex Computer Recruitment Ltd
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Technical Specialist

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Using ACF/VTAM and NCP we are developing a Multi System Networking facility for our mainframe and mini computer installation. Our Technical Support Team is responsible for supporting a wide range of software such as MVS, JES, CICS, IMS, VSPC, APL and works as a closely knit and highly proficient team. We would like to recruit a VTAM specialist to assist with our development plans and can offer a highly professional, stimulating and, we believe technically challenging environment in which to work.

MANAGEMENT & EXECUTIVE SELECTION

telephone 01-637 9611.

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SALES PEOPLE

£10K basic + commission
+ 2-litre car

North West & North East
London

The world market leader in the sales of computer graphics systems and peripherals has created an exciting opening (by promotion) for a sales person wishing to enter this high growth market.

You will be joining a company that has an outstanding reputation for the quality and range of its products; for the service it provides and for the benefits its employees receive.

A good track record, preferably with an engineering/electronics bias is all you need...

Call Tony McGrath on 01-637 9611 for an immediate interview.

COMPUTER GRAPHICS SUPPORT PEOPLE

£8½K + car

North of London

The world's number one supplier of sophisticated computer systems and peripherals is now offering a great career opportunity to young sales support professionals.

You will need a good knowledge of Fortran/Basic, preferably have a degree in engineering and as the position requires a high level of customer contact, the ability to communicate is essential.

The company offers excellent benefits in terms of training, personal development, working conditions

FOR THE RIGHT MOVE RIGHT NOW CALL DIANE
OURBRIDGE ON 01-637 9611.

PCM SALES PEOPLE

£19K + car

LARGE SYSTEMS SALES
London and South East

We have been retained by the foremost suppliers in the PCM market place to identify and select a good sales executive for their southern operation.

They have gained significant market penetration into new areas and are now looking to further expansion and growth.

A mainframe or large disc systems background, preferably in an IBM or IBM knockout environment, are the requirements.

The package, the car and the benefits are what you would expect from a major organisation.

Call Tony McGrath on 01-637 9611 for an immediate interview.

As the largest producer and distributor of data multiplexers in the world our client is significantly expanding their operations in the U.K.

They have retained us to identify a Senior Sales Executive for the Midlands area.

A sound knowledge of the datacomms industry coupled with the ability to handle negotiations to the highest level are the prerequisites on experience.

A high basic salary and excellent commission scheme with above average benefits are the rewards.

For further information contact Tony McGrath on 01-637 9611.



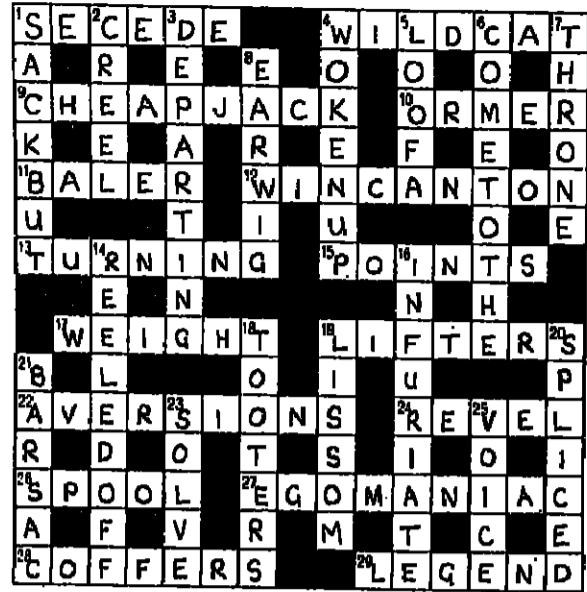
MANAGEMENT &
EXECUTIVE SELECTION

Jeff is 110

Suite 201/2 Albany House, 524 Regent Street, London W1R 5AA 01-637 9611

CROSSWORD

Solution to Prize Crossword 15



THIS month's £10 winner is Mike Orriel, a systems facilities planning supervisor at BL Systems Data Centre in Redditch. The winners of £5 are Paul Woodward, a programmer with B. J. Arnold in Leeds, and Trevor Ballinger, an analyst, programmer at the Royal Naval Store Depot Copenhaven, in Hawthorne, Wiltshire.

Education Service
Ealing College of Higher Education
Applications Programmers (2 Posts)

Salary: £640-£7134 per annum inclusive required for a Prime 500 computer being installed during the summer. The work is varied and will include applications on microcomputers. Applicants should have a degree or equivalent and be fluent in at least two programming languages.

Application forms and further details available from Chief Administrative Officer (TDU) Ealing College of Higher Education, St. Mary's Road, London W6 8RT. Telephone number 01-679 2424.

To be returned within fourteen days of the appearance of this advertisement.

Please quote ref. ED 304.

(1326)

Ealing

CONTRACTS
LONDON, HOME COUNTIES, MIDLANDS

for people with experience on or with:

INTEL 8020 Multibus
VAX System Software
VAX RTLS/2
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Please contact: System Computer Systems Engineers Ltd, Market House, Market Square, Aylesbury, Bucks.

Tel. (0296) 32023.

(5342)

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LONDON & H. COUNTIES (LH). MIDLANDS (M). NORTH (N). SCOTLAND (S). OVERSEAS (O)
Computer Professional Recruitment Consultancy

'COMPUTER PROFESSIONALS - MAKE SURE WE HAVE YOU IN MIND.'

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